

**FORMULATION AND EVALUATION OF RICE WATER TONER
AS ANTI-AGING PROPERTY****Yogesh. B. Raut, Sanjay K. Bais, Nandini V. Regoti ****Fabtech College of Pharmacy, Sangola**Tal-Sangola, Dist.-Solapur**Maharashtra -413307***ABSTRACT**

*The ancients have long recognized rice's ability to cure skin. One waste product from the food processing industry that might be used in cosmetic formulas is rice (*Oryza sativa*) water. But their use in skincare products is unsupported by scientific data. This research aims to assess the biological properties of rice water, namely its anti-aging and antioxidant qualities, by designing and developing an application of topical gel incorporating rice-based liquid. A panel of twelve individuals underwent a 28-day assessment of the biological and sensory impacts. An inhibition of elastase and in vitro biological antioxidant activity action were demonstrated by rice-based beverage. The gel composition, which included 96% rice water, had acceptable aesthetic qualities and was biocompatible with human skin. Hence, the use of rice water as an anti-aging ingredient is necessary that can be utilized as an ingredient in skincare products. The purpose of toner is to cleanse and revitalize the skin on the face. This study's methodology involves soaking rice in water at different ratios (kg/L) using a basic technique. With a pH of 6.4, the toner is deemed suitable for all skin types with adequate moisture, according to the analytical results. Six respondents' skin moisture levels were examined. The toner is hazy white due to rice grains and has a little thick consistency. Because rice grains have the ability to repair skin cells, they are good for the skin. For seven days, rice-washed water toner has no smell and is rich in protein, fat, manganese, and oil.*

Keywords: *Toner, rice water, green tea extract, aloe vera gel, rose water, essential oil, anti-aging.*

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INTRODUCTION

The primary food source for 50% of the mankind is rice (*Oryza sativa*) to meet their daily energy needs. While frequently consumed after boiling or soaking rice, rice water is generally thrown away in various food preparation processes across the globe. Both for avoiding of and for managing dermatological conditions UVB radiation damage, the grains of rice solutions plus oil were used for each their nano encapsulated forms.^[1] Furthermore, it has been shown that the bioactive chemicals in rice bran have possess anti-wrinkle qualities and work well to cure dandruff. However, there is a dearth of scientific literature revealing the skin advantages of rice water, and the few studies that do exist confirm the claims made about it mostly stated by cosmetic producers. Without supporting data from science, the custom of using rice water for baths, particularly among Asian women, developed impractically starch, the in-rice grains, in order to cure atopic dermatitis or other skin conditions that cause itching.^[2] It has been shown that the biodegradable polymer starch is safe to use in the pharmaceutical business, and that the mannose and glucose residues found in polysaccharides can lower. In a current investigation a solution including corn flour-based particles containing a medication that is anti- inflammatory was examined in mice as a model of dermal inflammation, and the results showed that starch had a beneficial impact on the composition's anti-allergic effectiveness.^[3] The search for fresh compounds to slow down the ageing process of the skin has intensified in recent years. At the same time, there is a growing awareness over natural, or preferably organic, farming- sourced ingredients in cosmetics. A cheap, easy-to-use, and natural ingredient is rice water.^[4] This can be added to extracted the many varieties that are consumed by humans as well as from the leftover rice that the rice industry produces in order to turn additional. Thus, primary goal create that included it in order assess effects on biology perception. In order implement idea, made, its physicochemical properties were assessed, and its antioxidant and anti-aging properties were examined in vitro. To preserve every rice component in this investigation, rice water was made from paddy rice that had been peeled.^[5]

The positive aspects of the rice water

1. **Hair care:** To strengthen, shine, and encourage hair development, use rice water as a hair rinse. It provides the hair follicles with nutrients: vitamins, minerals, and amino acids.
2. **Health of the Scalp:** It can help hydrate and calm the scalp, which lessens dandruff and eases itching or discomfort.^[6]
3. **Take Care of Your Skin:** To enhance the tone and texture of your skin, apply rice water topically. Free radical damage to the skin can be prevented by the antioxidants in it.
4. **Anti-aging Properties:** Rice water's antioxidants can aid to improve a more youthful complexion by reducing the visibility of fine lines and wrinkles.
5. **Sunburn Relief:** You can reduce inflammation and expedite the healing process by applying rice water to damaged skin.^[7]
6. **Skin Brightening:** Using rice water on a daily basis can assist to even out the tone of the skin by reducing hyperpigmentation and dark spots.
7. **Acne Treatment:** Rice water is good for skin that is prone to acne because of its mildly astringent qualities, which can help to tighten pores and lessen oiliness.^[8]

Kinds of toners:

Epidermal tighteners or exfoliants: The less severe toning kinds are these ones.

Botanical remedies: That includes marginally more powerful as well as have water, a humectant component, and a tiny amount of alcohol (up to 20%).

Acid toner: Usually containing either beta- or alpha-hydroxy acid, these are a potent type of toner.

Soaps: These tones are the strongest and have a high alcohol content (20–60%) together with antiseptics, water, and a humectant.^[9]

Toning agent effects on skin:

Before the advent of nourishing treatments, skin toner was commonly used as a second cleaning agent to remove leftover makeup from the face or to clear the skin of excess sebum secreted by the face. Toners for various face forms: combo, sticky, and delicate. Can be divided into two categories: alcohol-based and non-alcohol-based toners. These days, skin toners are more often used as cosmeceutical solutions with a variety of uses, such as antiseptics, pore-tightening, pH balancing, rehydrating, and soothing irritation. This is due to the products' diversity and popularity.^[11]

Advantages of toner:

Takes off makeup and oil.

Calms skin irritation.

Makes pores appear less noticeable.

Promotes moisture retention.^[12]

Textures and revitalizes the skin.

Provides and Guards.

Adjusts pH levels.

Reinstates organic nutrients^[13]

Disadvantages of toner:

One of the drawbacks of using skin toner is that products containing alcohol tend to make skin appear dry and brittle.

If overused, it could cause skin irritation. example, redness and edema.^[14]

MATERIALS AND METHODOLOGY:**Materials required for formulation of toner:**

Sr. No.	Ingredients	Role
1	Rice water extract	Anti-oxidant property
2	Green Tea Extract	Anti-oxidant property
3	Aloe vera	Anti-fungal property
4	Rose water	Astringent
5	Essential oil	Anti-bacterial and Anti-inflammatory properties
6	Grape fruit seed extract	Preservative

Table No.1.: Ingredients and their role

Sr. No.	Name of the ingredients	Scientific Name	Quantity(50ml)
1	Rice water	Oryza sativa	25ml
2	Green tea Extract	Camellia sinensis	14ml
3	Aloe vera	Aloe barbadensis miller	2gm
4	Rose water	Rosa damascena	9ml
5	Essential oil(optional)	-	1-2 drops
6	Grape fruit seed extract	Citrusxparadisi	2-5 drops

Table No.2.: Quantity of ingredients

Method of preparation:

Rinse $\frac{1}{2}$ cup of rice well to get rid of any contaminants.



Figure No. 1: Washing rice water



Place the rinsed rice in a bowl and add sufficient amount of water. Let it soak for 2-3 until the water turns cloudy.^[18]



Figure No.2: Soaked rice



Swirl the rice in the water and strain the rice water in a clean bowl.



Figure No.3.: Separated rice water



Add aloe vera gel, green tea extract and rose water. Add 1-2 drops of essential oil.(optional) ^[19,20]



Blend the mixture briefly or stir well to ensure all ingredient are combined



Allow the mixture to ferment for 12-24 hrs for additional benefits.[21]



Transfer the mixture in air tight container (spray bottle) and store it in refrigerator.



Evaluation tests ^[22]

DIRECTION TO USE:

Toner should be misted onto the skin upon cleansing.

Give the facial mist some time to stay that way. ^[23,24]

Hold it for ten to twenty minutes. If necessary, remove the spray using a piece of delicate cotton or material.

Apply two times a day for toning more effective skin-repairing effects. ^[25,26]

SAMPLE ANALYSIS TESTS:**Chemical-free qualities:**

An examination was conducted into the shades, smell, and look of the natural skin toner.

Similarity:

Similarity was investigated visually to see whether or not any obstructions were present. ^[27,28]

pH:

A 25-milliliter beaker with graduation marks was filled with the composition. Then, the measured pH meter was placed in the solution and left for a while before the measurement was performed.

Face annoyance:

After applying just, a tiny bit of the toner to the backside of one side of the hand and letting it sit for a while, it was discovered that the epidermis was not irritated. ^[29]

Face adaptation:

The complexion looked soft, moisturized, as well as flawless shortly after the facial toner was applied. ^[30]

Light exposure:

In order to observe any discoloration of the formulation, the product is placed in direct sunshine while still in its original container. There was no evidence of discoloration. ^[31]

Stickiness:

It was discovered that the particles were not particularly sticky.

Spreadability:

The toner was sprayed onto the hand and spread effortlessly with cotton and a smooth cloth.

Removal:

The face toner was easily removed. ^[32,33]

RESULTS

Sr. No	Parameter	Result
1	Description	Liquid
2	Colour	Light brown
3	Odour	Pleasant
4	Homogeneity	No any clogs
5	pH	5.2
6	Skin Irritation	No irritation
7	Skin Conditioning	Moisturising effect
8	Light Exposure	No discoloration
9	Stickiness	Not much sticky
10	Spreadability	Evenly spreaded
11	Removal	Easily Removable

Table No. 3.: Evaluation Test Results

DISCUSSION

Good outcomes were obtained with the spray toner composition. Everything was cheap and useful, and all of the goods were bought fresh from the neighborhood market. The examined formulation met the necessary criteria from that perspective as well. Despite having a cleansing effect, there was no rashes or irritation following application. The developed formula possessed the characteristics of a traditional cosmeceutical skincare formulation and was discovered to be physiochemically stable. Compared to gel or lotion, the spray formulation proved to be more effective due to its ability to better penetrate the skin's small pores by spraying tiny particles with a specific amount of power onto the skin. Using the inherent qualities of rice water to create a toner that hydrates, brightens, and supports general skin health is an example of a holistic approach to skincare.

CONCLUSION

Rice water is a mild yet efficient way to balance pH levels, soothe inflammation, and bring out the natural shine of the skin because of its rich content of vitamins, minerals, and antioxidants. Over time, people can experience smoother, healthier-looking skin by including this toner into their regular skincare routine and benefiting from the revitalizing qualities of rice water. A complete skincare solution is provided by a toner that combines rice water, rose water, aloe vera, and green tea extract. Every component has distinct advantages: rose water tones and revives the skin, aloe vera soothes and calms, rice water brightens and hydrates, and green tea extract has calming and antioxidant qualities. They combine to make a powerful mixture that lowers inflammation, adjusts pH levels, and improves the general health of the skin.

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